

ABSTRACT OF THE DISCLOSURE

5 A system including an induction machine with a
toroidally wound stator and a squirrel cage rotor is
presented. The toroidally wound stator has a plurality of
phase windings. A position sensor may be operatively
connected to the induction machine for providing a position
10 indication that is indicative of a relative position of the
rotor and the stator. The system also includes an inverter
having a plurality of solid-state switches and a control
system. The inverter has the same number of phases as the
toroidal induction machine. The inverter is connected to
15 selectively energize the phase windings. A programmable
microprocessor, such as a digital signal processor, is
operatively connected to the induction machine and includes
a program to implement vector control of the induction
machine. The microprocessor can also control the inverter
20 so that the induction machine operates with a predetermined
number of poles using pole phase modulation.